

**HEADQUARTERS
PHILIPPINE ARMY
OFFICE OF THE ARMY QUARTERMASTER
Fort Andres Bonifacio, Metro Manila**

TEST PARAMETERS

HYDRATION PACK, 3L CAPACITY, PHILARPAT/OD

TEST PARAMETERS	QM SPEC NR IE-22HP3LC dated 28 July 2015 with Amendment 1 dated 08 September 2018	CLASSIFICATION OF DEFECTS	
		Major	Minor
MATERIAL			
Hydration System Reservoir	Shall have a volume capacity of three (3) liters.	x	
	Shall be made of thermoplastic polyurethane (TPU) exterior bonded to polyethylene (PE) interior or multi-layer polyurethane.	x	
Total Plate Count Coliform	Not more than 10CFU Less than 1CFU.	x	
Opening	Shall be provided with a matching screw-on threaded type cap or the opening shall be of the zip-lock type.	x	
Diameter, cm	8.0 - 10.0	x	
Sip Tube	Shall be made of transparent polyurethane or polyvinyl chloride.	x	
Total Plate Count Coliform	Not more than 10CFU Less than 1CFU.	x	
Dimensions			
Outside Diameter, mm	11.0 ± 1.0		x
Thickness, mm	2.0 ± 0.2		x
Length, cm	100 (minimum)		x
Cover	The sip tube shall be provided with a cover made of three-layered laminated fabric.	x	
First Layer	Knitted nylon or polyester fabric, Olive Drab (OD)	x	
Second Layer	2.0 to 3.0 mm thick black rubberized foam	x	
Third Layer	Knitted nylon or polyester fabric, Olive Drab (OD)	x	
Bite Valve Assembly			
Bite Valve	The bite valve shall be made of medical grade silicone or styrene-butadiene rubber.	x	
Color	Olive Drab (OD)/black	x	
Total Plate Count Coliform	Not more than 10CFU Less than 1CFU.	x	
Bite Valve Cover	Made of hard plastic with same color shade as the bite valve.	x	
Shut-off valve	Shall be made of hard plastic	x	
Color	Olive Drab (OD)/black		x
BPA Free	The reservoir, sip tube and bite valve assembly shall be free of any trace of BPA (Bisphenol A). A certificate of compliance shall be submitted by the supplier to guarantee the absence of BPA.	x	
Cleaning Paraphernalia	Shall be provided with cleaning paraphernalia placed inside the pocket as illustrated and composed of two (2) cylindrical brushes (large brush for the inside of the reservoir and thin one with handle long enough to run through the length of the sip tube) and collapsible plastic frame for reservoir drying.	x	

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Instruction Manual	Shall be provided with manual as per manufacturer's standard.		X
Backpack Carrier			
Basic Material	Nylon	X	
Color	PHILARPAT/ Olive Drab (OD)	X	
Type of Weave	Plain		X
Thread Count/2.54 cm			
Warp	30 (minimum)		X
Filling	25 (minimum)		X
Yarn Size (Denier)			
Warp	1,000 (minimum)		X
Filling	1,000 (minimum)		X
Thickness, mm	0.45 (minimum)		X
Weight, g/m ²	450 (maximum)		X
Breaking Strength, kg (Grab Method)			
Warp	150 (minimum)	X	
Filling	140 (minimum)	X	
Water Repellency Rating, %	80 (minimum)	X	
Water Resistance, grams of water absorbed by blotter	0	X	
Color Quality (for PHILARPAT color only), Color Difference	2.5 (maximum)		X
Lining	Polyester	X	
Color	Olive Drab (OD)	X	
Type of Weave	Plain		X
Thread Count/2.54 cm			
Warp	90 (minimum)		X
Filling	65 (minimum)		X
Yarn Size (Denier)			
Warp	85 (minimum)		X
Filling	80 (minimum)		X
Thickness, mm	0.15 (minimum)		X
Weight, g/m ²	110 (maximum)		X
Breaking Strength, kg (Strip Method)			
Warp	900 (minimum)	X	
Filling	500 (minimum)	X	
Insulation Padding	Shall be made of foam with aluminized sheet on one side.		X
Thickness, mm	5.0 (minimum)		X
Straps	Nylon, Polyester or Polypropylene (Olefin) Webbing	X	
Color	Olive Drab (OD)		X
Strap # 1 Shoulder Strap (Top)			
Type of Weave	Plain Double		X
Width, cm	4.0 ± 0.5		X
Thickness, mm	0.8 (minimum)		X
Weight, g/linear meter	50 (maximum)		X
Breaking Strength, kg (full width)	500 (minimum)	X	
Strap # 2 Shoulder Strap (Bottom)			
Type of Weave	Plain Double		X
Width, cm	2.5 ± 0.5		X
Thickness, mm	0.8 (minimum)		X

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Weight, g/linear meter	40 (maximum)		x
Breaking Strength, kg (full width)	350 (minimum)	x	
Strap # 3 Horizontal Chess Strap			
Type of Weave	Plain Double		x
Width, cm	2.0 ± 0.5		x
Thickness, mm	0.4 (minimum)		x
Weight, g/linear meter	30 (maximum)		x
Breaking Strength, kg (full width)	100 (minimum)	x	
Binding Tape			
	Made of nylon, polyester or polypropylene (olefin) webbing	x	
Color	Olive Drab (OD)	x	
Width, cm	2.0 ± 0.5		x
D-Ring			
	Shall be made of hard plastic	x	
Color	Black or Olive Drab (OD)		x
Nr of pieces	8 pcs		x
Length, cm	3.5 ± 0.5		x
Width, cm	2.5 ± 0.5		x
Grommet			
	Brass, black chemical finish	x	
Nr of pieces	1 pc		x
Inside Diameter, mm	8.0 ± 2.0		x
Adjustment Buckle			
	Shall be made of hard plastic	x	
Color	Black or Olive Drab (OD)		x
Nr of pieces	2 pcs		x
Length, cm	2.5 ± 0.5		x
Width, cm	4.0 ± 0.5		x
Quick Release Buckle (Big)			
	Shall be made of hard plastic	x	
Color	Black or Olive Drab (OD)		x
Nr of pieces	2 prs		x
Overall Length, cm	6.0 ± 1.0		x
Overall Width, cm	3.0 ± 0.5		x
Breaking Strength, kg (closed position)	40 (minimum)	x	
Quick Release Buckle (Small)			
	Shall be made of hard plastic	x	
Color	Black or Olive Drab (OD)		x
Nr of pieces	1 pr		x
Overall Length, cm	5.0 ± 1.0		x
Overall Width, cm	2.5 ± 0.5		x
Breaking Strength, kg (closed position)	10 (minimum)	x	
Zipper			
	Made of nylon, No. 5, two-way, head-to-head type	x	
Color	Olive Drab (OD)		x
Length, cm	42.0 (minimum)		x
Thread			
	Nylon or polyester		x
Color	Olive Drab (OD)	x	
No. of Ply	2 (minimum)		x
Breaking Strength, kg	2.0 (minimum)	x	

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Construction Hydration system	The largest dimensions of the reservoir shall be along the vertical axis with the sip tube attached to the bottom portion of the reservoir to maximize the amount of accessible water.	x		
	The sip tube shall be provided with cover that envelops the entire length of the sip tube.		x	
Backpack Carrier Design	The design shall be cut and made in strict compliance with the design and dimensions as illustrated.	x		
Location of Insulation Padding	The insulation padding shall be inserted between the basic material and the lining on both front and back parts of the carrier.	x		
Front Cover of Carrier	Shall have a front cover as illustrated.	x		
Placing of Sip Tube	There shall be one (1) slit each on both side of the carrier, near the shoulder strap.	x		
	The slits shall be provided with binding tape with properties as stated in para 2.2.2.5.	x		
Placing of Grommet	The grommet shall be placed 3.0 ± 0.5 cm from the bottom as illustrated.		x	
Placing of D-Ring	Attached on the top/sides of the carrier via the use of strap #2.	x		
Carrier Top Handle	Made of strap #1, 21.0 ± 2.0 cm long shall be sewed along the top portion of the carrier as illustrated.	x		
Pocket and Cover of Cleaning Paraphernalia	The pocket and cover of the cleaning paraphernalia shall be made of same basic material as stated in 2.2.2.1. The location of the pocket and cover shall be as illustrated. The cover shall be provided with Velcro tape for closure.	x		
Shoulder Strap	The adjustable shoulder strap is made of two (2) portion the top and the bottom straps and shall be connected by using quick release buckle (big).	x		
	The top portion is made of strap #1 and shall be 40 ± 2 cm long.		x	
	The bottom portion shall be made of strap #2 and shall be 20 ± 2 cm long and the excess portion of the straps firmly secured with garter 2 cm wide (minimum) as illustrated.		x	
	One (1) additional reinforcement strap made of strap #2, 20 ± 2 cm long shall each be sewed on the right and left shoulder strap. It shall be located 15 ± 2 cm from the upper end of the top portion of the shoulder strap			x
	One (1) piece D-Ring as stated in para 2.2.2.6 shall be attached on each reinforcement strap, at the upper portion for insertion of the sip tube.			x
	One (1) pc adjustment buckle with properties stated in 2.2.2.8 shall be will attached along the body of each reinforcement strap as illustrated.			x
Horizontal Chest Strap	Shall be made of strap #3 and shall have a minimum length of 17.0 cm when closed across the chest.	x		
	The left portion of the chest strap shall have a fixed length of 11.0 ± 1.0 cm, while the right portion shall be adjustable and shall have a minimum length of 25.0 cm when extended fully and the excess portion of the strap firmly secured with garter 2 cm wide (minimum).	x		
	The male part of quick release buckle (small) shall be attached to the right portion of the chest strap while the female part of the quick release buckle (small) shall be attached to the left portion of the chest strap as illustrated.			x

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PERFORMANCE TEST Load Test	The backpack carrier with the hydration system filled up to its full capacity shall not show evidence of water seepage when subjected to 50 kg load for five (5) minutes.	x	
Drop Test	The backpack carrier with the hydration system filled up to its full capacity withstand the impact force without any damage on its part and accessory and shall not show of water seepage when dropped from a height of 5 ft unto a concrete floor.	x	
SHUT-OFF VALVE TEST OFF Position	The water shall not flow down the bite valve when the user bites into it and shall not show evidence of water leakage on the hydration system.	x	
ON Position	The water shall flow down the bite valve when the user bites into it and shall not show evidence of water leakage on the hydration system.	x	
TASTE TEST	The water in the reservoir shall not have an unpleasant taste after storage for three (3) days.	x	
Contractor's Label	With contractor's label	x	
Location	Printed at the inside back part of the cover.		x
Type of Ink	Black waterproof paint	x	
Contents of Label	HYDRATION PACK, 3L CAPACITY, PHILARPAT/OD Name of Manufacturer: Date Manufactured: Color		x
Type and Size of Letterings	Arial font, Size 10		x
"ARMY" Marking	With "ARMY" Marking	x	
Location	Printed on the center of the flap cover		x
Type of Ink	Black waterproof paint	x	
Type and Size of Letterings	Stencil font, Size 150		x
TOTAL TEST POINTS		65	71


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